

Appl. No. 10/605,656
Amdt. dated March 14, 2005
Reply to Office action of January 21, 2005

Amendments to the Specification:

Please replace paragraph 0023 with the following amended paragraph:

- 5 Please refer to Fig.5, which is a cross sectional diagram of a microinjector 50 according to the present invention. The microinjector 50 comprises a silicon substrate 52 connected to ground, a chamber 54 formed on the silicon substrate 52 for containing fluid, a manifold 56 formed between a fluid tank 57 and the chamber 54 for passing fluid from the fluid tank 57 to the chamber 54, a low stress silicon nitride 58 installed on a top
10 surface of the chamber 54, and an orifice 60 in fluid communication with the chamber 54, the orifice 60 being disposed above the chamber 54. The microinjector 50 also includes a first heater 62 and a second heater 64, both of which are disposed proximately adjacent to the orifice 60 and external to the chamber 54 for ejecting fluid from the chamber 54, a P-well doped region 66, a field oxide 68, a MOSFET 70 as a driving circuit formed on the
15 P-well doped region 66 for controlling the first and second heaters 62 and 64, and a first and a second SiO₂ layer 72 and 74, both of which are formed covering the first and second heaters 62 and 64. The microinjector contains a Si_xN_y layer 76 formed covering the second SiO₂ layer 74, a metal pad 78, a metal layer 80 formed between the first and second SiO₂ layers 72 and 74, a first metal connector formed in the metal layer 80 for
20 connecting the first and second heaters 62 and 64 and the metal pad 78, a P⁺ ion implant 82 as a guard ring formed adjacent to the MOSFET 70 for receiving holes emitted from the MOSFET 70, which is functioning under an electric field of high electricity, a metal plate 88 formed covering the Si_xN_y layer 76, a passivation opening 84 formed on a region that the metal plate 88 overlaps the P⁺ ion implant 82, and a conduction channel 86
25 connecting the passivation opening 84 to the P⁺ ion implant 82.

Please replace paragraph 0026 with the following amended paragraph:

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The P⁺ ion implant 82 of the microinjector 50 receives holes emitted from the MOSFET 70 and transmits the holes to ground via the second metal connector to isolate the MOSFET 70 from noise. In a process to fabricate the passivation opening 84, the second SiO₂ layer 74 and the Si_xN_y layer 76 are etched on top of the metal layer 80.

- 5 Therefore, the metal plate 88, which is made of gold or nickel, first shorts to the second metal connector in the metal layer 80 and then to ground via the passivation opening 84 and conduction channel 86 sequentially, and functions as an equivalent ground plate. The conduction channel 86 is formed in the same process as the metal plate 88, and is therefore also made out of gold or nickel.

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